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EXAMINER	
LEUNG, CHRISTINA Y	
ART UNIT	**PAPER NUMBER**
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/960,405	KATAGIRI ET AL.
	Examiner	Art Unit
	Christina Y. Leung	2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-21 and 25-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-21 and 25-29* is/are rejected.

7)☒ Claim(s) *4-9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 8 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Claim 8 recites only limitations that already appear in claim 1, using the exact same words, and therefore, does not further limit claim 1.

2. Claims 4-9 are objected to because of the following informalities:

Claims 4-9 recite limitations such as "an optical demultiplexer," and "a transmission band" of the demultiplexer, that are already recited in claim 1. These claims are objected to because they currently appear to recite that the claim includes a plurality of the same element (i.e., the filter includes two optical demultiplexers). The claims should be amended so that they clearly recite limitations that modify the elements already recited in claim 1 (such as by changing "an optical demultiplexer" to "said optical demultiplexer," etc.). Examiner notes that the limitations in question are found in claims 4 and 5; claims 6-9 are objected to because they depend on claims 4 and 5.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Claim 6 recites that "said transmission band of each said optical demultiplexer and said optical multiplexer per wavelength channel has a central wavelength substantially coinciding with the central wavelength of each wavelength of said WDM signal light." However, claim 1, on which claim 6 indirectly depends, specifically recites that the transmission bands *do not* coincide with the central wavelength of each wavelength channel of the WDM signal light. Therefore, claim 6 is indefinite because it appears to recite limitations that contradict limitations already recited in claim 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 4-8, 10-21, 25, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onaka et al. (JP 11-289296 A; see English-language equivalent document US 6,351,323 B1) in view of Suzuki (US 4,945,531 A) and Kersey et al. (US 6,594,410 B2).

Examiner notes that because JP 11-289296 A is in Japanese, all references below to its disclosure are made to its English-language equivalent document, US 6,351,323 B1.

Regarding claims 1 and 15, Onaka et al. disclose an optical node device (Figure 2) applicable to an optical network including a closed loop provided by an optical fiber, comprising:

a tunable wavelength selecting element (acousto-optic tunable filter AOTF 10) adapted to input WDM signal light obtained by wavelength division multiplexing a plurality of optical

signals having different wavelengths, the tunable wavelength selecting element having a function of dropping at least one optical signal from the WDM signal light and a function of adding at least one optical signal to at least one unassigned wavelength channel of the WDM signal light (column 7, lines 51-67; column 8, lines 1-39).

Further regarding claim 15 in particular, Onaka et al. further disclose a system comprising:

a closed loop provided by an optical fiber; and

a plurality of optical node devices arranged along the closed loop (Figures 10 and 45; column 18, lines 1-17);

wherein at least one of the optical node devices includes a tunable wavelength selecting element as discussed above.

Onaka et al. further disclose a wavelength selecting filter in the form of filters 13 as shown in Figure 2, but they do not specifically disclose a wavelength selecting filter comprising a demultiplexer and multiplexer connected together and including other details as specifically recited by claims 1 and 15.

However, Onaka et al. do disclose that the signals in their system may include undesirable amplified spontaneous emission (ASE) noise (column 8, lines 53-58). Suzuki teaches a system related to the one disclosed by Onaka et al. including a means for filtering ASE noise comprising a wavelength selecting filter (optical filter 100 shown in Figure 1), the filter comprising:

an optical demultiplexer 101 having an input port for inputting WDM signal light output and N output ports for respectively outputting the N optical signals separated from the WDM signal light; and

an optical multiplexer 102 having N input ports for respectively inputting N optical signals output from the demultiplexer, and an output port for outputting WDM signal light obtained by wavelength division multiplexing the N optical signals input to the N input ports (column 2, lines 47-56).

Regarding claims 1 and 15, it would have been obvious to a person of ordinary skill in the art to include a wavelength selecting filter as taught by Suzuki in the system disclosed by Onaka et al. in order to remove ASE noise from the WDM signal light in the system and thereby more effectively transmit desired signals in the system.

Further regarding claims 1 and 15, Suzuki does not specifically teach that the transmission band per wavelength channel of the optical demultiplexer is different from the transmission band per wavelength channel of the optical multiplexer or that either transmission band per wavelength channel has a central wavelength longer or shorter than the central wavelength of each wavelength channel of the WDM signal light.

However, Kersey et al. teach filtering an optical WDM signal through one filter and then another filter, wherein the transmission band (labeled "47'" in Figure 11) of the first filter has a central wavelength λ_A substantially coinciding with a first wavelength shorter than the central wavelength λ_C of the desired wavelength channel of the WDM signal; and

the transmission band 48' of the second filter has a central wavelength λ_B substantially coinciding with a second wavelength longer than the central wavelength λ_C of the desired wavelength channel of the WDM signal (Figure 11; column 16, lines 7-34).

It would have been obvious to a person of ordinary skill in the art to provide a first central wavelength shorter than the central wavelength of the desired channel and a second central wavelength longer than the central wavelength of the desired channel as taught by Kersey et al. in the demultiplexer/multiplexer filter structure taught by Onaka et al. in view of Suzuki et al. in order to advantageously provide a narrower filter band and therefore filter the desired channels more precisely.

Regarding claims 4, 5, 7, and 8, as well as the claims may be understood with regard to the claim objections above, Onaka et al. in view of Suzuki et al. and Kersey et al. suggest a wavelength selecting filter as recited in claims 4, 5, 7, and 8, comprising an optical demultiplexer and optical multiplexer with transmission bands as already described above with regard to claim 1.

Regarding claim 6, as well as the claim may be understood with respect to 35 U.S.C. 112, discussed above, the transmission band of each of the optical demultiplexer and optical multiplexer per wavelength channel has a central wavelength substantially coinciding with the central wavelength of each wavelength channel of the WDM signal light in the wavelength selecting filter taught by Suzuki (without modifications taught by Kersey) as already discussed above with regard to claim 1

Regarding claim 10, Onaka et al. disclose that the tunable wavelength selecting element comprises an acousto-optic tunable filter (AOTF 10 as shown in Figure 2; column 7, lines 51-67).

Regarding claims 11 and 17, Onaka et al. disclose the tunable wavelength selecting element (AOTF 10 shown in Figure 2) has a first input port ("INPUT") for inputting the WDM signal light, a second input port ("ADD") for inputting an optical signal to be added to the WDM signal light, a first output port ("OUTPUT") for outputting an optical signal to be passed through the tunable wavelength selecting element, and a second output port ("DROP") for outputting an optical signal to be dropped from the WDM signal light.

Regarding claims 12 and 18, Onaka et al. further disclose that the node device (Figure 2) further comprises:

an optical coupler 12 having a plurality of input ports and an output port connected to the second input port of the tunable wavelength selecting element 10;

an optical modulator 16 connected to each of the plurality of input ports of the optical coupler; and

a tunable light source (including laser diodes 19 in combination with tunable filters 14) connected to the optical modulator (column 8, lines 20-39).

Regarding claims 13 and 19, Onaka et al. further disclose that the node device (Figure 2) further comprises:

an optical coupler 11 having an input port connected to the second output port of the tunable wavelength selecting element 10, and a plurality of output ports;

a tunable filter 13 connected to each of the plurality of output ports of the optical coupler; and

an optical receiver 17 connected to the tunable filter (column 7, lines 64-67; column 8, lines 1-9).

Regarding claims 14 and 16, Onaka et al. further disclose an optical amplifier (such as amplifiers 30 or 34 on the transmission line as generally shown in Figure 3, or other optical amplifiers shown in other figures including Figure 10, etc.; column 8, lines 66-67; column 9, lines 1-41).

Regarding claims 20 and 27, Onaka et al. disclose an optical node device applicable to an optical network including a closed loop provided by an optical fiber (Figure 1), comprising:

an optical demultiplexer (labeled "DMUX" in Figure 1) having an input port for inputting WDM signal light obtained by wavelength division multiplexing N (N is an integer satisfying 1 < N) optical signal having different wavelength and N output ports for respectively outputting the N optical signals separated from the WDM signal light;

N 2 x 2 optical switches (as shown in Figure 1) each having first and second input ports and first and second output ports, the N optical signals output from the optical demultiplexer being supplied to the first input ports of the N 2 x 2 switches, respectively, each of the N 2 x 2 optical switches switching between a bar state where the first and second input ports are connected to the first and second output ports, respectively, and a cross state where the first and second input ports are connected to the second and first output ports, respectively; and

an optical multiplexer ("MUX") having N input ports for respectively inputting N optical signal output from the first output ports of the N 2 x 2 optical switches, and an output port

outputting WDM signal light obtained by wavelength division multiplexing the N optical signals input to the N input ports (column 2, lines 1-24).

Further regarding claim 27 in particular, Onaka et al. further disclose a system comprising:

a closed loop provided by an optical fiber; and

a plurality of optical node devices arranged along the closed loop (Figures 10 and 45; column 18, lines 1-17);

wherein at least one of the optical node devices includes means for add drop multiplexing such as described with respect to claim 20.

Regarding claims 20 and 27, Onaka et al. further disclose that the signals in their system may include undesirable amplified spontaneous emission (ASE) noise (column 8, lines 53-58). Suzuki teaches a system related to the one disclosed by Onaka et al. including a means for filtering ASE noise comprising a wavelength selecting filter (optical filter 100 shown in Figure 1), the filter comprising:

an optical demultiplexer 101 having an input port for inputting WDM signal light output and N output ports for respectively outputting the N optical signals separated from the WDM signal light; and

an optical multiplexer 102 having N input ports for respectively inputting N optical signals output from the demultiplexer, and an output port for outputting WDM signal light obtained by wavelength division multiplexing the N optical signals input to the N input ports (column 2, lines 47-56).

Regarding claims 20 and 27, it would have been obvious to a person of ordinary skill in the art to specifically utilize the filtering functions of the demultiplexer and multiplexer in the system disclosed by Onaka et al. in the way as taught by Suzuki in order to remove ASE noise from the WDM signal light in the system and thereby more effectively transmit desired signals in the system.

Further regarding claims 20 and 27, Suzuki does not specifically teach that the transmission band per wavelength channel of the optical demultiplexer is different from the transmission band per wavelength channel of the optical multiplexer or that either transmission band per wavelength channel has a central wavelength longer or shorter than the central wavelength of each wavelength channel of the WDM signal light.

However, Kersey et al. teach filtering an optical WDM signal through one filter and then another filter, wherein the transmission band (labeled "47'" in Figure 11) of the first filter has a central wavelength λ_A substantially coinciding with a first wavelength shorter than the central wavelength λ_C of the desired wavelength channel of the WDM signal; and

the transmission band 48' of the second filter has a central wavelength λ_B substantially coinciding with a second wavelength longer than the central wavelength λ_C of the desired wavelength channel of the WDM signal (Figure 11; column 16, lines 7-34).

It would have been obvious to a person of ordinary skill in the art to provide a first central wavelength shorter than the central wavelength of the desired channel and a second central wavelength longer than the central wavelength of the desired channel as taught by Kersey et al. in the demultiplexer/multiplexer filter structure taught by Onaka et al. in view of Suzuki et

al. in order to advantageously provide a narrower filter band and therefore filter the desired channels more precisely.

Regarding claim 21, Onaka et al. disclose that the WDM signal light has a plurality of wavelength channels arranged at substantially equal intervals in the wavelength domain;

the input port and the i-th (i is an integer satisfying 1 <= i <= N output port of the optical demultiplexer are coupled by a transmission band including the wavelength of the any one of the wavelength channels;

the j-th (j is an integer satisfying 1 <= j <= N) input port and the output port of the optical multiplexer are coupled by a transmission band including the wavelength of any one of the wavelength channels (column 2, lines 1-38)

Regarding claim 25, Onaka et al. further disclose a plurality of optical transmitters (each labeled "OS" in Figure 1) for outputting optical signals to be added to any unassigned channels of the WDM signal light supplied to the optical demultiplexer; and

an optical switch (the larger element labeled "OPTICAL SWITCH" in Figure 1) for switching the connections between the plurality of optical transmitters and the second input ports of the N 2 x 2 optical switches.

Regarding claim 28, Onaka et al. further disclose an optical amplifier (such as amplifiers 30 or 34 on the transmission line as generally shown in Figure 3, or other optical amplifiers shown in other figures including Figure 10, etc.; column 8, lines 66-67; column 9, lines 1-41).

7. Claims 9 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onaka et al. in view of Suzuki and Kersey et al. as applied to claims 4 and 20 respectively above, and further in view of Otsuka et al. (JP 11-218790 A).

Examiner notes that because JP 11-218790 A is in Japanese, all references below to its disclosure are made to its English-language equivalent document, US 6,538,782 B1.

Regarding claim 9, as the claim may be understood with regard to the claim objection above, Onaka et al. in view of Suzuki and Kersey et al. describe a system as discussed above with regard to claims 1 and 4 including an optical demultiplexer and multiplexer, but they do not specifically suggest that the demultiplex and multiplexer are arrayed waveguide gratings.

However, it is well known in the art that wavelength demultiplexers and multiplexers such as in the system described by Onaka et al. in view of Suzuki and Kersey et al. may be implemented in several ways, and Otsuka et al. specifically teach implementing demultiplexers and multiplexers as arrayed waveguide gratings (column 1, lines 59-67; column 2, lines 1-15).

Regarding claim 9, it would have been obvious to a person of ordinary skill in the art to use arrayed waveguide gratings as taught by Otsuka et al. in the system described by Onaka et al. in view of Suzuki and Kersey et al. as an engineering design choice of a known way to implement the demultiplexer and multiplexer already disclosed. The claimed differences exist not as a result of an attempt by Applicants to solve an unknown problem but merely amount to the selection of expedients known as design choices to one of ordinary skill in the art.

Regarding claim 26, Onaka et al. in view of Suzuki and Kersey et al. describe a system as discussed above with regard to claim 20. Onaka et al. further disclose a plurality of optical receivers (each labeled "OR" in Figure 1) for receiving optical signals dropped from the WDM signal supplies to the optical demultiplexer. Onaka et al. disclose an optical wavelength multiplexer/demultiplexer element connecting the receivers to the second output ports of the N 2 x 2 optical switches as shown in Figure 1 and does not specifically disclose an optical switch for

this purpose. However, Otsuka et al. teach a system related to the one described by Onaka et al. in view of Suzuki and Kersey et al. including means for adding and dropping signals with a demultiplexer, N 2 x 2 switches, and a multiplexer (Figure 8). Otsuka et al. further teach an optical switch for switching the connections between a plurality of optical receivers and the output ports of the N 2 x 2 optical switches as shown in Figure 8.

Regarding claim 26, it would have been obvious to a person of ordinary skill in the art to use an optical switch as taught by Otsuka et al. to connect the 2 x 2 optical switches and optical receivers in the in the system described by Onaka et al. in view of Suzuki and Kersey et al. as an engineering design choice of a way to effectively provide the dropped wavelength channels to corresponding receivers. Again, the claimed differences exist not as a result of an attempt by Applicants to solve an unknown problem but merely amount to the selection of expedients known as design choices to one of ordinary skill in the art.

8. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Suzuki in view of Kersey et al.

Regarding claim 29, as similarly discussed above with regard to claim 1, Suzuki discloses an optical node device (optical filter 100 shown in Figure 1), comprising:

an optical demultiplexer 101 having an input port for inputting WDM signal light output and N output ports for respectively outputting the N optical signals separated from the WDM signal light; and

an optical multiplexer 102 having N input ports for respectively inputting N optical signals output from the demultiplexer, and an output port for outputting WDM signal light

obtained by wavelength division multiplexing the N optical signals input to the N input ports (column 2, lines 47-56).

Suzuki further discloses that the overall filter characteristic of filter 100 (i.e., demultiplexer 101 in combination with multiplexer 102) is one that outputs each wavelength channel of the WDM signal as shown in Figure 2B (column 3, lines 15-33). Suzuki does not specifically disclose that the transmission band per wavelength channel of the optical demultiplexer is different from the transmission band per wavelength channel of the optical multiplexer or that either transmission band per wavelength channel has a central wavelength longer or shorter than the central wavelength of each wavelength channel of the WDM signal light.

However, Kersey et al. teach a system related to the one disclosed by Suzuki including filtering a desired channel from a WDM signal light (Figure 11). Kersey et al. further teach filtering an optical WDM signal through one filter and then another filter, wherein the transmission band (labeled "47'" in Figure 11) of the first filter has a central wavelength λ_A substantially coinciding with a first wavelength shorter than the central wavelength λ_C of the desired wavelength channel of the WDM signal; and

the transmission band 48' of the second filter has a central wavelength λ_B substantially coinciding with a second wavelength longer than the central wavelength λ_C of the desired wavelength channel of the WDM signal (Figure 11; column 16, lines 7-34).

It would have been obvious to a person of ordinary skill in the art to provide a first central wavelength shorter than the central wavelength of the desired channel and a second central wavelength longer than the central wavelength of the desired channel as taught by Kersey

et al. in the demultiplexer/multiplexer filter structure disclosed by Suzuki et al. in order to advantageously provide a narrower filter band and therefore filter the desired channels more precisely.

Response to Arguments

9. Applicants' arguments filed 03 March 2006 have been fully considered but except for Applicants' arguments regarding the claim objection to claims 4-7 and 9 on page 9 of their response, they are not persuasive.

10. Regarding the objections to claims 4-9, Examiner acknowledges that the terminology in claim 4-7 and 9 is different than what is recited in claim 1 and therefore may recite further limitations that are not already recited in claim 1. Therefore, the objection to claims 4-7 and 9 on that particular basis is withdrawn. However, claim 8 recites only limitations that already appear in claim 1, using the exact same words, and therefore clearly does not further limit claim 1. Furthermore, Examiner respectfully notes that claims 4-9 recite limitations such as "an optical demultiplexer," and "a transmission band" of the demultiplexer, that are already recited in claim 1. These claims are still objected to because they currently appear to recite that the claims include a plurality of the same element (i.e., the filter includes two optical demultiplexers). The claims should be amended so that they clearly recite limitations that modify the elements already recited in claim 1 (such as by changing "an optical demultiplexer" to "said optical demultiplexer," etc.) Examiner notes that the limitations in question are found in claims 4 and 5; claims 6-9 are objected to because they depend on claims 4 and 5.

11. Regarding the rejection of claim 6 under 35 U.S.C. 112, Examiner respectfully disagrees with Applicants assertion on page 9 of their response that "As claim 6 does not recite

information regarding the length of the wavelength, the claim does not contradict claim 1, in which the length of the wavelength is recited." Examiner respectfully notes that claim 6 recites that the transmission bands of the optical demultiplexer and optical multiplexer have "a central wavelength substantially coinciding with the central wavelength of each wavelength of said WDM signal light," while its parent claim 1 recites that the demultiplexer transmission band substantially coincides with a "first wavelength shorter than the central wavelength" and the multiplexer transmission band substantially coincides with a "second wavelength longer than the central wavelength." In other words, claim 1 specifically recites that the transmission bands *do not* coincide with the central wavelength of each wavelength channel of the WDM signal light. Examiner submits that a "first wavelength shorter than the central wavelength" or a "second wavelength longer than the central wavelength" by definition cannot be the same as the central wavelength. In the context of the claims, the transmission band of the demultiplexer may either substantially coincide with the central wavelength itself, or substantially coincide with a first wavelength shorter than the central wavelength, but cannot substantially coincide with both as apparently claimed in claim 6.

12. Regarding the rejections of the claims under 35 U.S.C. 103, in response to Applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Examiner respectfully disagrees with Applicants' assertion on page 11 of their response that "Kersey does not provide information regarding wavelength characteristics" and that

"Kersey does not add any relevant information to Suzuki." On the contrary, Kersey et al. teach filtering an optical WDM signal through one filter and then another filter, wherein the transmission band (labeled "47'" in Figure 11) of the first filter has a central wavelength λ_A substantially coinciding with a first wavelength shorter than the central wavelength λ_C of the desired wavelength channel of the WDM signal; and the transmission band 48' of the second filter has a central wavelength λ_B substantially coinciding with a second wavelength longer than the central wavelength λ_C of the desired wavelength channel of the WDM signal (Figure 11; column 16, lines 7-34). It would have been obvious to a person of ordinary skill in the art to provide a first central wavelength shorter than the central wavelength of the desired channel and a second central wavelength longer than the central wavelength of the desired channel as taught by Kersey et al. in the demultiplexer/multiplexer filter structure taught by Onaka et al. in view of Suzuki et al. in order to advantageously provide a narrower filter band and therefore filter the desired channels more precisely.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 6:30 to 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christina Y Leung
CHRISTINA LEUNG
PRIMARY EXAMINER